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MASSACHUSETTS INSTITUTE OF TECHNOLOGY

LINCOLN LABORATORY

LEXINGTON, MASSACHUSETTS

This list of Unclassified Publications of Lincoln Laboratory is the first Supplement to the 15 March 1964 edition, which should be retained until a new cumulative listing is published.

Progress Reports, Technical Reports, Group Reports and Technical Notes listed herein are deposited with DDC. Beginning January 1965, Journal Articles and Meeting Speeches (when reprints are available) are also deposited with DDC.

Out-of-print unclassified (released) Lincoln Laboratory reports are available, as microfilm or photoprint copies, from the Microreproduction Laboratory, Hayden Memorial Library, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139. Requests should cite the appropriate serial numbers and prices.

Accepted for the Air Force  
Stanley J. Wisniewski  
Lt Colonel, USAF  
Chief, Lincoln Laboratory Office

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## KEY TO SYMBOLS

*	Joint report
†	Out of print
§	Consultant or non-Lincoln author
R	Reprints available
H	Hayden Library serial number
M	Microfilm
P	Photoprint

## QUARTERLY PROGRESS REPORTS

### DIVISION 2

#### AIRCRAFT CONTROL AND WARNING

#### DATA SYSTEMS

	<u>DDC No.</u>		<u>DDC No.</u>
† 1 June 1952		15 May 1964	600838
† 1 September 1952	4642	15 August 1964	604590
† 15 January 1953	6743	15 November 1964	609005
† 15 April 1953	19356	15 February 1965	612541

### DIVISION 3

#### COMMUNICATIONS AND COMPONENTS

#### RADIO PHYSICS

	<u>DDC No.</u>		<u>DDC No.</u>
† 1 July 1952	173011	15 May 1964	441192
† 30 September 1952	170188	15 August 1964	446691
† 1 October 1952	2229	15 November 1964	609014
† 15 January 1953	4907	15 February 1965	612773
† 15 April 1953	12270		

### DIVISION 4

#### WEAPONS

#### RADAR

	<u>DDC No.</u>		<u>DDC No.</u>
† 1 July 1952	173011	15 June 1964	442680
† 31 October 1952	4550	15 September 1964	607160
† 15 February 1953	6742	15 December 1964	610021
† 15 May 1953	16457		

# Quarterly Progress Reports

## DIVISION 6 SPACE COMMUNICATIONS

	<u>DDC No.</u>
15 June 1964	602973
15 September 1964	450448

## DIVISION 7 ENGINEERING

	<u>DDC No.</u>
15 June 1964	602621
15 September 1964	450183
15 December 1964	609872

## DIVISION 8 SOLID STATE

	<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
15 April 1964	439365	H-578 M \$1.50 P \$2.20
15 July 1964	603514	H-597 1.50 2.40
15 October 1964	608569	H-619 1.50 2.40
15 January 1965	456768	H-631 1.50 2.40

## SOLID STATE RESEARCH LINCOLN LABORATORY

	<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
1964:1	601830	H-587 M \$1.50 P \$ 8.00
1964:2	606126	H-606 1.50 10.60
1964:3	609828	H-627 1.50 9.20
1964:4	613961	H-639 1.50 8.40

SEMIANNUAL TECHNICAL SUMMARY REPORTS  
TO ADVANCED RESEARCH PROJECTS AGENCY

HIGH-POWER TUBE PROGRAM

SEISMIC DISCRIMINATION

	<u>DDC No.</u>	<u>Hayden Serial and Prices</u>		<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
† 31 Dec. 1961	270734	H-549	30 June 1964	443444	
		M \$1.50	31 Dec. 1964	455743	
		P \$7.20			



# TECHNICAL REPORTS

TR No.				DDC No.	Hayden Serial and Prices
* 5	Multiplexing a Radio Tele- type System Using a Random Carrier and Correlation Detection	B. J. Pankowski	16 May 1952	168857	
* 6	Echo-Box Pulse Doppler Radar	L. D. Smullin R. H. Fox	6 May 1952	172738	
* 10	A Unified Approach to MTI and Doppler Radar	R. M. Fano	22 July 1952	4905	
† 13	An Analysis of the Detection of Repeated Signals in Noise by Binary Integration	J. V. Harrington	14 Aug. 1952	949	H-645 M \$1.50 P \$5.00
17	The Applicability of Generat- ing Electrostatic Voltmeters to the Detection of Exhaust Trails of Aircraft	F. A. Rodgers R. N. Dexter	12 Nov. 1952	4906	
† 75	Some Results in the Study of Narrow-Band Gaussian Noise	R. Price	26 Jan. 1955	64030	H-527 M \$1.50 P \$3.40
† 266	Electromagnetic Studies of Ionized Wakes	E. L. Murphy S. Edelberg G. F. Pippert	20 Apr. 1962	282309	H-416
271	Echolocation with Wide-Band Waveforms: Bat Sonar Signals	D. A. Cahlander	6 May 1964	605322	
295	Energy-Band Calculations	F. W. Quelle	17 Jan. 1963	405145	
296	Sketchpad: A Man-Machine Graphical Communication System	I. E. Sutherland	30 Jan. 1963	404459	H-629 M \$1.50 P \$11.00
317	Membrane and Bending in Shallow, Spherical Shells	F. Y. M. Wan	11 Aug. 1964	607457	
† 339	Signal Parameter Estimation for Seismometer Arrays	E. J. Kelly M. J. Levin	8 Jan. 1964	435489	H-643 M \$1.50 P \$6.80
350	The Variable-Drift Klystron — A High Efficiency Amplifier	I. Hefni M. A. Nader	8 Apr. 1964	441439	
351	Beam Pulse Heating	E. Silverman	13 Apr. 1964	443715	

## Technical Reports

TR No.				<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
352	Characterization and Measurement of Time- and Frequency-Spread Channels	R. G. Gallager	30 Apr. 1964	443715	
353	Field Emission Vacuum Voltage Breakdown	G. E. Vibrans	8 May 1964	602844	
355	Nondestructive Readout Scheme for Thin Film Memories	M. S. Maltz	21 May 1964	603755	
356	Limitations of Oxide-Cathode High Current Density Operation	H. A. Pike	22 May 1964	604890	
357	Introduction to the TRADEX Radar System	G. R. Curry	15 July 1964	448350	
* 360	Sequential Measurement of Multidimensional Transducers	J. R. Sklar	29 Oct. 1964	615515	
361	Numerical Methods in the Chemical Kinetics of High Temperature Air	L. B. Raisty	29 July 1964	449857	
364	Spin-Wave Effects in the Magnetization Reversal of a Thin Ferromagnetic Film	K. J. Harte	27 Aug. 1964	610068	
365	The Haystack Experimental Facility	H. G. Weiss	15 Sept. 1964	608272	
* 366	Digital Communication over Fixed Time-Continuous Channels with Memory - with Special Application to Telephone Channels	J. L. Holsinger	20 Oct. 1964	614110	
367	Haystack Calibration Antenna	A. Sotiropoulos J. Ruze	15 Dec. 1964	611436	
368	Effects of General Relativity on Interplanetary Time-Delay Measurements	I. I. Shapiro	18 Dec. 1964	614232	
369	Study of an Orbiting Dipole Belt Communication System	F. Belvin T. J. Goblick, Jr.	22 Dec. 1964	613583	
370	Decay of Electron Density in the Wakes of Hypervelocity Spheres	W. M. Kornegay	23 Dec. 1964	612152	
* 371	The Computation Problem with Sequential Decoding	J. E. Savage	16 Feb. 1965		

# Technical Reports

TR No.				<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
372	Measurement of Properties of Spread Channels by the Two-Frequency Method with Application to Radar Astronomy	T. Hagfors	11 Jan. 1965	614233	
373	Influence of the Earth's Surface on Radar	N. I. Durlach	18 Jan. 1965		
374	Ionospheric Backscatter Observations at Millstone Hill	J. V. Evans	22 Jan. 1965		
375	Production and Propagation of Spherical Shock Waves at Low Ambient Pressures	W. M. Kornegay	26 Jan. 1965	463164	
377	An Experimental On-Line Data Storage and Retrieval System	J. F. Nolan A. W. Armenti	3 Feb. 1965	615658	
379	Calibration of a Pressure Sensor for Measurements in Continuum and Rarefied Gas Flows	W. M. Kornegay J. D. Fridman	8 Feb. 1965	614424	
380	AC Breakdown in Gases	C. E. Muehe	26 Feb. 1965		

# GROUP REPORTS

No.				DDC No.	Hayden Serial and Prices
1964-5	Sequential Decoding on a Channel with Simple Memory	J. E. Savage	2 Apr. 1964	437163	H-575 M \$1.50 P \$3.00
1964-6	Random Noise Considerations in the Design of Magnetic Film Sense Amplifiers	H. Blatt	17 Aug. 1964	605323	H-602 M \$1.50 P \$7.20
1964-16	Cross-Section Measurements of the Echo II Satellite by the Millstone L-Band Radar	R. F. Julian D. P. Hynek	7 Apr. 1964	602751	H-593 M \$1.50 P \$2.60
1964-17	Spectra of Vocoder Channel Signals	C. M. Rader	4 May 1964	600185	H-580 M \$1.50 P \$5.00
1964-19	Analog Orbit Computer	N. P. Smith S. H. Wright	16 Apr. 1964	600956	H-583 M \$1.50 P \$4.20
1964-20	Scattering Matrix of a Modified (Five-Port) Turnstile	J. A. Kostriza	24 Apr. 1964	439484	H-577 M \$1.50 P \$3.60
1964-22	Proposal for 7.75 - 8.35 kMcps Diplexer Using Side-Wall Couplers and Cut-Off Guide	J. A. Kostriza	24 Apr. 1964	600332	H-581 M \$1.50 P \$2.40
1964-23	On the Accuracy and Resolution of Radar Signals	F. C. Schweppe	25 June 1964	601986	H-589 M \$1.50 P \$9.20
1964-24	A Short Description of the TRADEX Data Recovery System	O. V. Fortier P. J. Harris	5 May 1964	439260	H-576 M \$1.50 P \$4.40
1964-25	Haystack-West Ford Intersite Coupling Link	J. E. Gillis	14 May 1964	601143	H-585 M \$1.50 P \$8.60
1964-26	A Remark on Orthonormal Bases of Continuous Functions in a Hilbert Space	T. S. Pitcher	12 May 1964	600534	H-582 M \$1.50 P \$2.20
1964-28	Phase Shift by Periodic Loading of Waveguide	J. A. Kostriza	25 June 1964	603060	H-595 M \$1.50 P \$7.00

## Group Reports

No.				<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
1964-29	A Study of Radar Clutter in TRADEX	G. R. Curry	25 May 1964	441070	H-586 M \$1.50 P \$6.80
1964-31	Input Current Compensation for Transistor Operational Amplifiers	J. N. Harris R. S. Orr	28 Oct. 1964	608819	H-621 M \$1.50 P \$14.00
1964-32	The Periodic Analysis of Sampled Data	E. Korngold	15 June 1964	601942	H-588 M \$1.50 P \$10.60
1964-33	Probability Density for the Radar Cross Section of One or More Randomly-Oriented Dipoles	S. L. Borison	22 June 1964	442679	H-591 M \$1.50 P \$4.60
1964-34	Multisegment Depressed- Collector for High-Power Klystrons	A. Saharian	16 June 1964	442958	H-592 M \$1.50 P \$17.40
1964-35	Automatic Doppler Control for the West Ford Antenna Pointing System	J. E. Gillis	25 June 1964	602080	H-590 M \$1.50 P \$4.80
1964-36	Exploratory Preparation of Foils Strongly Colored in the 1-6 $\mu$ Region of the Infrared	E. W. Pike	30 July 1964	604009	H-599 M \$1.50 P \$16.60
1964-37	Partial Fractions and Error- Correcting Codes	E. Weiss	6 July 1964	602982	H-594 M \$1.50 P \$4.20
1964-38	Computer Programs for Haystack Servo Testing	L. D. Massey	21 July 1964	603794	H-598 M \$1.50 P \$16.80
1964-40	Haystack Pointing System: Sun	H. E. Fraechtman	29 July 1964	603318	H-596 M \$1.50 P \$7.60
1964-41	Haystack Pointing System: Ephemeris Tape Program	D. M. Hafford	25 Sept. 1964	450196	H-612 M \$1.50 P \$9.20
1964-43	A Method for Evaluating a Generalized Fresnel Integral Related to the Spectra of Amplitude and Frequency Modulated Pulses	E. B. Temple	5 Aug. 1964	604480	H-600 M \$1.50 P \$5.40
1964-44	Processing of Limited Network Seismic Signals	E. J. Kelly, Jr.	4 Sept. 1964	447220	H-604 M \$1.50 P \$5.20

## Group Reports

No.				<u>DDC No.</u>	<u>Hayden Serial and Prices</u>
1964-45	Haystack Pointing System: Moon	H. E. Frachtman	10 Sept. 1964	606154	H-607 M \$1.50 P \$4.60
1964-46	Haystack Pointing System: Planet	H. E. Frachtman	10 Sept. 1964	606501	H-608 M \$1.50 P \$5.00
1964-47	Haystack Pointing System: Stars	H. E. Frachtman	25 Sept. 1964	449739	H-611 M \$1.50 P \$6.80
1964-48	Efficient Approximation of Orthogonal Waveforms	L. I. Bluestein R. L. Greenspan§	3 Nov. 1964	451755	H-616 M \$1.50 P \$5.20
1964-49	Multidimensional Parameter Estimation for Point Mass Re-entry Trajectories	H. O. Schneider	27 Aug. 1964	446744	H-603 M \$1.50 P \$7.20
1964-51	The Software Problem	D. B. Yntema	4 Sept. 1964	605824	H-605 M \$1.50 P \$3.60
1964-54	The Lincoln Experimental Terminal Signal Processing System	P. R. Drouilhet, Jr. I. L. Lebow	16 Oct. 1964	450689	H-613 M \$1.50 P \$4.00
1964-55	The Lincoln Experimental Satellite	H. Sherman P. Waldron D. C. MacLellan	14 Oct. 1964	449485	H-610 M \$1.50 P \$5.00
1964-57	Haystack Pointing System: Interpolation	R. Teoste	28 Oct. 1964	608289	H-615 M \$1.50 P \$6.00
1964-59	Dynamic-Range Reduction of Video Signals by Ampli- tude Compression	R. D. Behn	16 Nov. 1964	609361	H-623 M \$1.50 P \$7.60
1964-60	The Application of Analysis of Variance to the Seismic Discrimination Problem	J. S. Richters	3 Nov. 1964	451871	H-618 M \$1.50 P \$4.40
1964-61	Random Scatter Channels	E. J. Kelly, Jr.	4 Nov. 1964	451756	H-617 M \$1.50 P \$10.60
1964-63	An Inequality for Certain Correlation Functions	R. T. Prosser	29 Oct. 1964	608288	H-614 M \$1.50 P \$2.20

## Group Reports

No.				DDC No.	Hayden Serial and Prices
1964-64	Algorithms for Estimating a Re-entry Body's Position, Velocity and Ballistic Coefficient in Real Time or for Post Flight Analysis	F. C. Schweppe	3 Dec. 1964	609524	H-626 M \$1.50 P \$10.40
1964-65	Draft Program Description for Radar and Radiometric Lunar Surface Studies	P. B. Sebring, Editor	20 Nov. 1964	609384	H-624 M \$1.50 P \$9.20
1964-67	Bounds on the Inverse of a Positive Definite Symmetric Matrix	M. J. Levin	20 Nov. 1964	452772	H-622 M \$1.50 P \$2.20
1964-70	An Approach to Giant-Stepping	E. Weiss	23 Nov. 1964	608758	H-620 M \$1.50 P \$5.20
1964-71	Coordinate Conversion for the Haystack Pointing System	P. Stylos	10 Dec. 1964	609433	H-625 M \$1.90 P \$32.60
1965-1	A Large Aperture Seismic Array	P. E. Green, Jr.	6 Jan. 1965	609851	H-628 M \$1.50 P \$6.40
1965-3	Experimental Observation of the Creeping Wave Phenomenon in Backscatter Using a Short Pulse Radar System	D. F. Sedivec D. E. Foreman§	14 Jan. 1965	612537	H-630 M \$1.50 P \$6.40
1965-6	Design Aspects of Minimal-Power Digital Circuitry	W. G. Schmidt D. E. Chace	9 Feb. 1965	612669	H-637 M \$1.50 P \$4.60
1965-7	Smoothing and Processing of Simulated AMRAD Trajectory Data	A. Bertolini S. F. Catalano	21 Jan. 1965	612151	H-635 M \$1.50 P \$4.00
1965-8	A Method for Power Spectrum Parameter Estimation	M. J. Levin	10 Feb. 1965	612796	H-633 M \$1.50 P \$4.20
1965-10	Statistics of the Radar Cross Section of a Volume of Chaff	S. L. Borison	10 Feb. 1965	612887	H-634 M \$1.50 P \$3.20
1965-12	El Campo Solar Radar Antenna Modification	M. E. Devane	8 Feb. 1965	612150	H-636 M \$1.50 P \$4.80
1965-13	An Estimate of the Absorption Mean Free Path for a Photon in a Gas	H. E. Moses	4 Feb. 1965	611576	H-632 M \$1.50 P \$4.00



# TECHNICAL NOTES

No.				DDC No.	Hayden Serial and Prices
1965-1	Programmable Film Reader	A. W. Armenti D. F. Clapp A. I. Schulman R. A. Wiesen	10 Mar. 1965	615106	H-647 M \$1.60 P \$40.00
1965-4	Computationally Feasible Frequency Estimates in the Presence of Unknown Phase and Amplitude	L. A. Gardner, Jr.	11 Mar. 1965	613341	H-638 M \$1.50 P \$15.40
1965-6	On the Measurement of Atmos- pheric Multipath and Doppler Spread by Passive Means	B. Reiffen	5 Mar. 1965	614787	H-646 M \$1.50 P \$4.60
1965-7	Measurements on an L-Band Power Amplifier for Phased Arrays	L. Cartledge	17 Mar. 1965	614426	H-641 M \$1.50 P \$3.00
1965-11	Signals Distortion in a Fre- quency Divider	J. Max	12 Mar. 1965	614425	H-640 M \$1.50 P \$12.00
1965-12	Array Beam-Forming Networks	L. J. Ricardi	13 Apr. 1965	615522	H-648 M \$1.50 P \$4.00
1965-13	Aspects of Associative Processing	J. A. Feldman	21 Apr. 1965	614634	H-644 M \$1.50 P \$10.20
1965-16	A Program for Estimation of Power Spectra	C. R. Arnold E. Korngold	21 May 1965		H-652
1965-17	Haystack Univac 490 Remote Teletype Console Connection	P. D. Smith	5 May 1965	615523	H-649 M \$1.50 P \$4.00
1965-18	Some Iterative Methods Using Partial Order for Solution of Nonlinear Boundary Value Problems	H.S. Witsenhausen	14 May 1965		H-650



## JOURNAL ARTICLES

JA No.

- |            |   |   |  |
|------------|---|---|--|
| 2046A<br>R | Asymptotically Optimum Quantizers and Optimum Analog to Digital Converters for Continuous Signals           | L. I. Bluestein   | Trans. IEEE, PTGIT <u>1T-10</u> , 242 (1964)                             |
| 2047<br>R  | Power Spectrum Parameter  | M. J. Levin   | IEEE, Trans. Inform. Theory <u>IT-11</u> , 100 (1965)                    |
| 2058       | An Efficient Algorithm for Finding Certain Minimum-Cost Procedures for Making Binary Decisions              | J. R. Slagle  | J. Assoc. Comp. Mach. <u>11</u> , 253 (1964)                             |
| 2096A      | Radar Studies of the Sun, Moon, and Planets   | J. H. Chisholm<br>G. H. Pettengill  | J. Research Natl. Bur. Standards <u>68D</u> , 565 (1964)                 |
| 2102<br>R  | Modulated Infrared Diode Spans 30 Miles   | R. J. Keyes<br>T. M. Quist<br>R. H. Rediker<br>M. J. Hudson<br>C. R. Grant<br>J. W. Meyer | Electronics <u>36</u> , No. 14, 38 (1963)                                |
| 2134<br>R  | Infinite Dimensional Control Problems. I. On the Closure of the Set of Attainable States for Linear Systems | P. L. Falb  | J. Math. Anal. Appl. <u>9</u> , 12 (1964)                                |
| 2136<br>R  | Magnetic Properties of a Single Crystal of Manganese Phosphide  | E. E. Huber, Jr.<br>D. H. Ridgley   | Phys. Rev. <u>135</u> , A1033 (1964)                                     |
| 2151       | Parametric Upconverter Receiving Array  | H. J. Pratt, Jr.<br>N. G. Damocogna §   | Accepted Microwave J.  |
| 2154<br>R  | Digital Circuit Redundancy  | R. Teoste   | Trans. IEEE, PTGR <u>R-13</u> , 42 (1964)                                |
| 2159A      | Parameter Estimation for Stochastic Processes   | T. S. Pitcher   | Acta Math. <u>112</u> , 1 (1964)   |
| 2165       | VLF and LF Fields Propagating Near and Into a Rough Sea   | R. M. Lerner<br>J. Max  | J. Research Natl. Bur. Standards (Radio Science) <u>69D</u> , 273 (1965) |
| 2195       | Detection of the Peak of an Arbitrary Spectrum  | L. Kleinrock  | Trans. IEEE, PTGIT <u>1T-10</u> , 215 (1964)                             |
| 2235<br>R  | Energy Gap Measurements by Tunneling Between Superconducting Films. II. Magnetic Field Dependence           | R. H. Meservey<br>D. H. Douglass, Jr.   | Phys. Rev. <u>135</u> , A24 (1964)                                       |

## Journal Articles

JA No.

2237	A Proposed Spacecraft-to-Earth Communications Link	J. G. Barry G. F. Dalrymple J. C. Fielding B. S. Goldstein W. F. Higgins	Trans. IEEE, Commun. Electron. <u>83</u> , 593 (1964)
2245 R	Performance of Coherent Detection Systems Using Decision-Directed Channel Measurement	J. G. Proakis P. R. Drouilhet, Jr. R. Price	Trans. IEEE, PTGCS <u>CS-12</u> , 54 (1964)
2249 R	The Application of Semiconductor Optical Radiators to Space Communication	B. S. Goldstein J. D. Welch	Trans. IEEE, Commun. Electron. <u>83</u> , 470 (1964)
2250 R	An Acquirable Code	D. Gorenstein E. Weiss	Inform. and Control <u>7</u> , 315 (1964)
2255	Near-Field Characteristics of a Linear Array	L. J. Ricardi	Microwave J. <u>8</u> , No. 3, 41 (1965)
2256 R	Channel Vocoder with Digital Pitch Extractor	J. Tierney B. Gold V. Sferrino J. A. Dumanian E. J. Aho	J. Acoust. Soc. Am. <u>36</u> , 1901 (1964)
2261 R	Parametric Analysis of Jammed Active Satellite Links	B. Reiffen H. Sherman	Trans. IEEE, PTGCS <u>CS-12</u> , 102 (1964)
2271 R	Classical Ground State Spin Configurations in the Corundum Lattice	N. Menyuk K. Dwight	J. Phys. Chem. Solids <u>25</u> , 1031 (1964)
2272 R	A Cluster Method for Finding Minimum Energy Spin States	D. H. Lyons T. A. Kaplan	J. Phys. Chem. Solids <u>25</u> , 645 (1964)
2278	A New Formulation of Particle Mechanics	R. T. Prosser	Accepted Memoirs Am. Math. Soc.
2284 R	Circular Aperture Synthesis	J. Ruze	Trans. IEEE, PTGAP <u>AP-12</u> 691 (1964)
2285 R	Partial Pressures in Equilibrium with Group IV Tellurides. II. Tin Telluride	R. F. Brebrick A. J. Strauss	J. Chem. Phys. <u>41</u> , 197 (1964)
2286 R	A Portable Receiver for Ultrasonic Waves in Air	J. J. G. McCue A. Bertolini	Trans. IEEE, PTGSU <u>SU-11</u> , 41 (1964)
2292 R	Estimation of a System Pulse Transfer Function in the Presence of Noise	M. J. Levin	Trans. IEEE, PTGAC <u>AC-9</u> , 229 (1964)
2292A	Discussion of "Estimation of a System Pulse Transfer Function in the Presence of Noise"	L. E. McBride § M. J. Levin	IEEE Trans. Automat. Control <u>AC-10</u> , 214 (1965)

## JA No.

2295	Interface-Alloy Epitaxial Heterojunctions	R. H. Rediker S. Stopek J. H. R. Ward	Solid-State Electron. <u>7</u> , 621 (1964)
2300 R	Radar Evidence of Solar Wind	J. H. Chisholm J. C. James	Astrophys. J. <u>140</u> , 377 (1964)
2305 R	Diffused Junction Diodes of PbSe and PbTe	J. F. Butler	J. Electrochem. Soc. <u>111</u> , 1150 (1964)
2310 R	The Relation of the Initial Costate to the Cost Surface in Optimal Systems	H. K. Knudsen M. Athans	Trans. IEEE, PTGAC <u>AC-9</u> , 315 (1964)
2320B	The Kinematics of the Angular Momentum of a Particle. I. Translation Broadening of Angular Momentum	H. E. Moses S. C. Wang	Nuovo Cimento <u>36</u> , 788 (1965)
2323 R	A Note on the Equivalence of Certain Realizations of Boson Annihilation and Creation Operators Due to K. O. Friedrichs	H. E. Moses	Communs. Pure Appl. Math. <u>17</u> , 355 (1964)
2324 R	A Proposal for an Associative Memory Using Magnetic Films	J. I. Raffel T. S. Crowther	Trans. IEEE, PTGEC <u>EC-13</u> , 611 (1964)
2331 R	Evaluation of Likelihood Functions for Gaussian Signals	F. C. Schweppe	IEEE Trans. Inform. Theory <u>IT-11</u> , 61 (1965)
2332 R	Partial Pressures in Equilibrium with Group IV Tellurides. III. Germanium Telluride	R. F. Brebrick	J. Chem. Phys. <u>41</u> , 1140 (1964)
2333 R	Note on Buzz-Hiss Detection	B. Gold	J. Acoust. Soc. Am. <u>36</u> , 1659 (1964)
2335 R	Band Edge Structure of PbS, PbSe, and PbTe	J. O. Dimmock G. B. Wright	Phys. Rev. <u>135</u> , A821 (1964)
2338 R	Multidimensional Parameter Estimation by the Summed Weighted Least Squares Minimization of Remainders	H. Schneider	J. Astron. Sci. <u>11</u> , No. 3 61 (1964)
2341 R	Vacuum Voltage Breakdown as a Thermal Instability of the Emitting Protrusion	G. E. Vibrans	J. Appl. Phys. <u>35</u> , 1600 (1964)
2343 R	On the Interpretation of Radar Reflections from the Moon	J. V. Evans T. Hagfors	Icarus <u>3</u> , 151 (1964)
2344 R	Galvano-Thermomagnetic Effects in Semiconductors and Semimetals. IV. Mercury Selenide	T. C. Harman	J. Phys. Chem. Solids <u>25</u> , 931 (1964)
2345 R	Searching for Novel Targets	U. Neisser R. Lazar	Percept. and Motor Skills <u>19</u> , 427 (1964)

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2346 R	Some Non-Central F-Distributions Expressed in Closed Form	R. Price	Biometrika <u>51</u> , 107 (1964)
2349 R	Note on Quantum Effects in Radiometer Observations	T. Hagfors M. L. Meeks	Astron. J. <u>69</u> , 447 (1964)
2350 R	Video Pulse Amplifier with Wide Dynamic Range	R. E. Richardson	Rev. Sci. Instr. <u>35</u> , 1600 (1964)
2351 R	The Frequency Dependence of the Powers and Impedances of Varactor Frequency Multipliers	A. I. Grayzel	Proc. IEEE (Correspondence) <u>52</u> , 1056 (1964)
2353	Magneto-Optical Scattering from Multilayer Magnetic and Dielectric Films	D. O. Smith	Accepted Optica Acta
2355	The Bandwidth of the Abrupt Junction Varactor Frequency Doubler	A. I. Grayzel	Accepted IEEE Trans. Circuit Theory
2356 R	Ionospheric Backscatter Observations	J. V. Evans M. Loewenthal	Planet. Space Sci. <u>12</u> , 915 (1964)
2357 R	Radar Echoes from the Sun	J. C. James	Trans. IEEE, PTGMIL <u>MIL-8</u> , 210 (1964); Trans. IEEE, PTGAP <u>AP-12</u> , 876 (1964)
2360A	Thermistor Measures Dielectric Gas Content	E. B. Murphy	Electronics <u>37</u> , No. 27, 54 (1964)
2361A	Energy Levels of $d^1$ Electrons in $\text{CaF}_2$ . Evidence of Strong Dynamical Jahn-Teller Distortions	J. R. O'Connor J. H. Chen	Appl. Phys. Letters <u>5</u> , 100 (1964)
2362 R	On the Angular Resolution of Multiple Targets	J. R. Sklar F. C. Schweppe	Proc. IEEE (Correspondence) <u>52</u> , 1044 (1964)
2363 R	Experiment with Speechlike Phase in a Spectrally Flattened Pitch-Excited Channel Vocoder	B. Gold	J. Acoust. Soc. Am. <u>36</u> , 1892 (1964)
2364	The Reduction of Electromagnetic Backscatter from a Plasma-Clad Conducting Body	E. L. Murphy	J. Appl. Phys. <u>36</u> , 1918 (1965)
2365 R	Backscattering from an Undulating Surface with Applications to Radar Returns from the Moon	T. Hagfors	J. Geophys. Res. <u>69</u> , 3779 (1964)
2366 R	Spontaneous Bending of Thin III Crystals of III-V Compounds	M. C. Finn H. C. Gatos	Surface Sci. <u>1</u> , 361 (1964)
2369 R	Radar Frequency Modulations for Accelerating Targets Under a Bandwidth Constraint	F. C. Schweppe	IEEE Trans. Mil. Electron. <u>MIL-9</u> , 25 (1965)

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2370 R	Theory of Electromagnetic Field Measurement and Photoelectron Counting	P. L. Kelcey W. H. Kleiner	Phys. Rev. <u>136</u> , A316 (1964)
2371 R	An F Region Eclipse	J. V. Evans	J. Geophys. Res. <u>70</u> , 131 (1965), DDC 613886
2373 R	With Cryogenics	J. W. Meyer	IEEE Student J. 9 (September 1964)
2374 R	Aspherical Spin Density in S-State Cations	T. A. Kaplan	Phys. Rev. <u>136</u> , A1636 (1964), DDC 613810
2376	Cyclotron Resonance: (Diamagnetic Resonance)	G. F. Dresselhaus	Accepted <u>Encyclopedia of Physics</u>
2378 R	Representations of the Inhomogeneous Lorentz Group in Terms of an Angular Momentum Basis: Derivation for the Cases of Non-zero Mass and Zero Mass, Discrete Spin	J. S. Lomont H. E. Moses	J. Math. Phys. <u>5</u> , 1438 (1964)
2379	The Dark Side of the Laser	J. J. Schlickman R. H. Kingston	Electronics <u>38</u> , No. 8, 93 (1965)
2380A R	Optical deHaas-Shubnikov Effect in Antimony	M. S. Dresselhaus J. G. Mavroides	Solid State Commun. <u>2</u> , 297 (1964), DDC 453108
2382 R	Measurements of UHF and L-Band Radar Clutter in the Central Pacific Ocean	G. R. Curry	IEEE Trans. Mil. Electron. <u>MIL-9</u> , 39 (1965)
2383 R	Partial Pressures and Gibbs Free Energy of Formation for Congruently Subliming CdTe(c)	R. F. Brebrick A. J. Strauss	J. Phys. Chem. Solids <u>25</u> , 1441 (1964), DDC 614292
2384 R	Efficiency in a Tetrahedral-Anvil Press as Related to Anvil and Pyrophyllite Size	M. D. Banus S. D. Nye	Rev. Sci. Instr. <u>35</u> , 1319 (1964), DDC 453368
2385 R	Ultrasonics - A Report on the 1963 Symposium	J. J. G. McCue	Phys. Today <u>17</u> , No. 6, 36 (1964)
2386 R	Experimental Bound on the Orbital Effects of Charge Drag	I. I. Shapiro	J. Geophys. Res. <u>69</u> , 4693 (1964), DDC 453365
2388	Lasers	R. H. Kingston	Accepted <u>Encyclopedia of Physics</u>
2389	Reststrahlen Reflection in HgTe	D. H. Dickey J. G. Mavroides	Solid State Commun. <u>2</u> , 213 (1964)
2390 R	Electrochemical Dember Effect in Semiconductors	W. W. Harvey M. C. Finn	Surface Sci. <u>2</u> , 456 (1964), DDC 614180
2391 R	Stimulated Raman Emission at 90° to the Ruby Beam	J. H. Dennis P. E. Tannenwald	Appl. Phys. Letters <u>5</u> , 58 (1964)



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| 2392       | Single Crystal Growth of Transition Metal Oxides from Polytungstate Fluxes   | W. Kunnmann<br>A. Ferretti<br>R. J. Arnott<br>D. B. Rogers   | J. Phys. Chem. Solids <u>26</u> , 311 (1965)                       |
| 2393<br>R  | Vector Pitch Detection   | C. M. Rader  | J. Acoust. Soc. Am. <u>36</u> , 1963 (1964), DDC 453104            |
| 2394       | The Band Gap of Boron Phosphide  | R. I. Stearns §  | J. Appl. Phys. <u>36</u> , 330 (1965)                              |
| 2398<br>R  | Temperature Dependence of Attenuation of 70-Gc/sec Acoustic Waves in Quartz  | J. B. Thaxter<br>P. E. Tannenwald  | Appl. Phys. Letters <u>5</u> , 67 (1964)                           |
| 2399<br>R  | Galvano-Thermomagnetic Phenomena and the Figure of Merit in Bismuth. I. Transport Properties of Intrinsic Material | T. C. Harman<br>J. M. Honig<br>B. M. Tarmy   | Adv. Energy Conversion <u>5</u> , 1 (1965)                         |
| 2400<br>R  | Matched-Filter Theory for High-Velocity Accelerating Targets   | E. J. Kelly<br>R. P. Wishner   | IEEE Trans. Mil. Electron. <u>MIL-9</u> , 56 (1965)                |
| 2401<br>R  | The Behavior of Likelihood Ratios of Stochastic Processes Related by Groups of Transformations                     | T. S. Pitcher  | Ann. Math. Stat. <u>36</u> , 529 (1965)                            |
| 2404<br>R  | A $\lambda/4$ and $\lambda/2$ Shift Method for Elimination of Unwanted Wall-Echoes in Radar-Anechoic Chambers      | J. H. Halberstein<br>P. C. Fritsch   | Proc. IEEE (Correspondence) <u>52</u> , 1743 (1964), DDC 613811    |
| 2405<br>R  | PbTe Diode Laser   | J. F. Butler<br>A. R. Calawa<br>R. J. Phelan, Jr.<br>T. C. Harman<br>A. J. Strauss<br>R. H. Rediker              | Appl. Phys. Letters <u>5</u> , 75 (1964)                           |
| 2407<br>R  | Array Antennas: New Applications for an Old Technique  | J. L. Allen  | IEEE Spectrum <u>1</u> , No. 11, 115 (1964), DDC 454539            |
| 2409<br>R  | Diagonal Representation of the Radar Scattering Matrix for an Axially Symmetric Body                               | S. L. Borison  | IEEE Trans. Antennas Propag. <u>AP-13</u> , 176 (1965), DDC 613887 |
| 2410       | Diamagnetism   | J. B. Goodenough   | Accepted <u>Encyclopedia of Physics</u>                            |
| 2412<br>R  | Peritectic Reaction in the Superconductor $\text{Nb}_3\text{Sn}$ ( $\text{Cb}_3\text{Sn}$ )                        | F. J. Bachner<br>H. C. Gatos<br>M. D. Banus  | Trans. Met. Soc. AIME <u>233</u> , 227 (1965), DDC 613812          |
| 2413A<br>R | Band Structure of HgTe and HgTe-CdTe Alloys  | T. C. Harman<br>W. H. Kleiner<br>A. J. Strauss<br>G. B. Wright<br>J. G. Mavroides<br>J. M. Honig<br>D. H. Dickey | Solid State Commun. <u>2</u> , 305 (1964), DDC 453102              |

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| 2415<br>R | On the Fuel-Optimal Singular Control of Nonlinear Second-Order Systems                                      | M. Athans<br>M. D. Canon  | Trans. IEEE, PTGAC <u>AC-9</u> , 360 (1964), DDC 613888       |
| 2416<br>R | Luminescence and Coherent Emission in a Large-Volume Injection Plasma in InSb                               | I. Melngailis<br>R. J. Phelan, Jr.<br>R. H. Rediker                                 | Appl. Phys. Letters <u>5</u> , 99 (1964)                      |
| 2417<br>R | Inversion of {111} Surfaces in Single Crystal Regrowth During Interface-Alloying of Intermetallic Compounds | E. D. Hinkley<br>R. H. Rediker<br>M. C. Lavine                                      | Appl. Phys. Letters <u>5</u> , 110 (1964)                     |
| 2418<br>R | Semiconductor Injection Laser   | R. H. Rediker   | <u>McGraw-Hill Yearbook of Science and Technology</u> (1965)  |
| 2419<br>R | PbSe Diode Laser  | J. F. Butler<br>A. R. Calawa<br>R. J. Phelan, Jr.<br>A. J. Strauss<br>R. H. Rediker | Solid State Commun. <u>2</u> , 303 (1964), DDC 453105         |
| 2420A     | Evidence of Stimulated Emission in Ruby-Laser-Pumped GaAs   | J. J. Schlickman<br>M. E. Fitzgerald<br>R. H. Kingston                              | Proc. IEEE (Correspondence) <u>52</u> , 1739 (1964)           |
| 2422<br>R | Measured Transition from Laminar to Turbulent Flow and Subsequent Growth of Turbulent Wakes                 | W. G. Clay<br>M. Labitt<br>R. E. Slattery   | AIAA J. <u>3</u> , 837 (1965)                                 |
| 2423<br>R | Constitutional Supercooling in Iodine Vapor Crystal Growth  | T. B. Reed<br>W. J. LaFleur   | Appl. Phys. Letters <u>5</u> , 191 (1964)                     |
| 2425<br>R | On the Schwartz Inequality  | M. J. Levin   | Proc. IEEE (Correspondence) <u>53</u> , 107 (1965)            |
| 2428<br>R | Circulator Synthesis  | J. A. Weiss   | Trans. IEEE, Microwave Theory Tech. <u>MTT-13</u> , 38 (1965) |
| 2429A     | Generation of Stokes and Anti-Stokes Radiation in Raman Media   | H. A. Haus §<br>P. L. Kelley<br>H. J. Zeiger  | Phys. Rev. <u>138</u> , A960 (1965)                           |
| 2433      | Bounds on the Volume and Height Distributions of the Ambiguity Function                                     | R. Price<br>E. M. Hofstetter  | Accepted IEEE Trans. Inform. Theory                           |
| 2434<br>R | On the Behavior of $f_{O_2}$ During Solar Eclipses  | J. V. Evans   | J. Geophys. Res. <u>70</u> , 733 (1965), DDC 613889           |
| 2435<br>R | Ionospheric Investigations by the Faraday Rotation of Incoherent Backscatter                                | G. H. Millman §<br>V. C. Pineo<br>D. P. Hynek                                       | J. Geophys. Res. <u>69</u> , 4051 (1964), DDC 453364          |
| 2436<br>R | Distribution of Magnetic Moment in Hexagonal Cobalt   | R. M. Moon  | Phys. Rev. <u>136</u> , A195 (1964), DDC 453106               |
| 2437<br>R | Electron-Beam-Pumped Laser  | C. E. Hurwitz<br>R. J. Keyes  | Appl. Phys. Letters <u>5</u> , 139 (1964)                     |

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JA No.

2443 R	Electric Furnace for Operation in Oxidizing, Neutral, and Reducing Atmospheres to 2400°C	T. B. Reed R. E. Fahey	Rev. Sci. Instr. <u>36</u> , 289 (1965)
2446 R	Electromagnetic Mode Mixing in Nonlinear Media	R. H. Kingston A. L. McWhorter	Proc. IEEE <u>53</u> , 4 (1965), DDC 613890
2447 R	Superconducting Characteristics of the High-Pressure InSb- $\beta$ Tin System	M. D. Banus S. N. Vernon H. C. Gatos	J. Appl. Phys. <u>36</u> , 864 (1965)
2452 R	Elastic Constants of HgTe	J. G. Mavroides D. F. Kolesar	Solid State Commun. <u>2</u> , 363 (1964), DDC 614308
2453 R	A Solid-State Room-Temperature Operated GaAs Laser Transmitter	G. F. Dalrymple B. S. Goldstein T. M. Quist	Proc. IEEE (Correspondence) <u>52</u> , 1742 (1964)
2454	Resistivities and Transformation Rates of High-Pressure InSb-Sn Alloys	M. D. Banus A. J. Strauss L. B. Farrell	Accepted J. Appl. Phys.
2456 R	Pressure Dependence of the Alpha-Beta Transition Temperature in Silver Selenide	M. D. Banus	Science <u>147</u> , 732 (1965), DDC 613891
2457	Magnetic Properties of InAs Diode Electroluminescence	F. L. Galeener § I. Melngailis G. B. Wright R. H. Rediker	J. Appl. Phys. <u>36</u> , 1574 (1965)
2459 R	Digitized Voice-Excited Vocoder for Telephone-Quality Inputs, Using Bandpass Sampling of the Baseband Signal	B. Gold J. Tierney	J. Acoust. Soc. Am. <u>37</u> , 753 (1965)
2460 R	Electrical Properties of Ferromagnetic $\text{CrO}_x$ ( $1.89 < x < 2.02$ )	D. S. Chapin J. A. Kafalas J. M. Honig	J. Phys. Chem. <u>69</u> , 1402 (1965)
2461	The Transformation from a Linear Momentum to an Angular Momentum Basis for Particles of Zero Mass and Finite Spin	H. E. Moses	J. Math. Phys. <u>6</u> , 928 (1965)
2464 R	Semiconductor Lasers	R. H. Rediker	Phys. Today <u>18</u> , No. 2, 42 (1965), DDC 613892
2467 R	Radar Observations of Venus at 3.6 Centimeters	D. Karp W. E. Morrow, Jr. W. B. Smith	Icarus <u>3</u> , 473 (1964), DDC 613893
2473	Adsorption Theory from the Viewpoint of Order-Disorder Theory	J. M. Honig	Accepted Chap. 13, <u>The Solid Gas Interface</u> (Marcell-Dekker, New York)
2474 R	Optical Pyrometer Measurement of RF Power	T. B. Reed J. T. Roddy	Rev. Sci. Instr. <u>36</u> , 620 (1965)



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2475 R	Simple Construction for Determining the Phase Change of Light Reflected at Normal Incidence	G. B. Wright	Appl. Optics <u>4</u> , 366 (1965), DDC 614309
2477 R	Magnetoabsorption of the Indirect Transition in Germanium	J. Halpern B. Lax	J. Phys. Chem. Solids <u>26</u> , 911 (1965)
2479 R	Cause of the Mid-Latitude Evening Increase in $f_oF_2$	J. V. Evans	J. Geophys. Res. <u>70</u> , 1175 (1965), DDC 614310
2480	Partial Pressures of Hg(g) and Te <sub>2</sub> (g) in the Hg-Te System from Optical Densities	R. F. Brebrick A. J. Strauss	Accepted J. Phys. Chem. Solids
2482 R	X-Band Modulation of GaAs Lasers	B. S. Goldstein R. M. Weigand	Proc. IEEE (Correspondence) <u>53</u> , 195 (1965)
2483 R	Fourth Test of General Relativity	I. I. Shapiro	Phys. Rev. Letters <u>13</u> , 789 (1964), DDC 613894
2486 R	Band Structure and Magnetism of Gadolinium Metal	J. O. Dimmock A. J. Freeman §	Phys. Rev. Letters <u>13</u> , 750 (1964), DDC 613895
2487	Line Shape and Amplitude of Giant Quantum Oscillations in Ultrasonic Absorption	Y. Shapira § B. Lax	Phys. Rev. <u>138</u> , A1191 (1965)
2488 R	Ultrasonics	J. J. G. McCue	Science <u>147</u> , 309 (1965), DDC 613828
2492 R	Lorentz Microscopy of Small Ferromagnetic Particles	M. S. Cohen	J. Appl. Phys. <u>36</u> , 1602 (1965)
2493	On Surface Wave Coupling Between Elements of Large Arrays	J. L. Allen	Accepted IEEE Trans. Antennas Propag.
2494 R	The Haystack Microwave Research Facility	H. G. Weiss	IEEE Spectrum <u>2</u> , No. 2, 50 (1965)
2495	The Effect of Trivalent Manganese on the Crystal Symmetry of Some Lithium Spinel	D. B. Rogers R. W. Germann R. J. Arnott	Accepted J. Appl. Phys.
2496	Discrete Sequential Search	W. L. Black	Inform. and Control <u>8</u> , 159 (1965)
2498 R	High Efficiency Varactor Upper-Sideband Upconverter	H. J. Pratt W. J. Ince R. C. Sicotte	Proc. IEEE (Correspondence) <u>53</u> , 305 (1965)
2501	Galvano-Thermomagnetic Phenomena and the Figure of Merit in Bismuth. II. Survey of Experimental Data and Calculation of Device Parameters	T. C. Harman J. M. Honig L. Jones §	Accepted Adv. Energy Conversion
2504	Simulation of Radar Backscattering in a Ripple Tank	A. J. Bogush, Jr.	Accepted Proc. IEEE

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JA No.

2505 R	Longitudinal Injection-Plasma Laser of InSb	I. Melngailis	Appl. Phys. Letters <u>6</u> , 59 (1965), DDC 613903
2506 R	Observation of Interband Transitions in Antimony	M. S. Dresselhaus J. G. Mavroides	Phys. Rev. Letters <u>14</u> , 259 (1965), DDC 614312
2509	Properties of Mercury Chalcogenides	T. C. Harman	Accepted Chap. 15, <u>Properties of II-VI Compounds</u> (North-Holland, Amsterdam)
2510 R	Measurement of Amplitude Noise in Optical Cavity Masers	C. Freed H. A. Haus §	Appl. Phys. Letters <u>6</u> , 85 (1965), DDC 614737
2511 R	Spin Density of s Electrons in Iron	T. A. Kaplan	Phys. Rev. Letters <u>14</u> , 499 (1965)
2512	Mid-Latitude Ionospheric Temperatures on Magnetically Quiet and Disturbed Days	J. V. Evans	J. Geophys. Res. <u>70</u> , 2726 (1965)
2515 R	Optically Pumped Semiconductor Laser	R. J. Phelan, Jr. R. H. Rediker	Appl. Phys. Letters <u>6</u> , 70 (1965), DDC 613905
2516	Chemical Inhomogeneities and Square B-H Loops	J. B. Goodenough	Accepted J. Appl. Phys.
2517	Properties of the PbSe Diode Laser	J. F. Butler A. R. Calawa R. H. Rediker	IEEE J. Quant. Electron. <u>QE-1</u> , 4 (1965)
2518	Free Carrier Magneto-Optical Effects	E. D. Palik § G. B. Wright	Accepted <u>Physics of III-B Compounds</u> , Vol. 2 (Academic Press, New York)
2519 R	Comparison of Vector and Autocorrelation Pitch Detectors	L. I. Bluestein C. M. Rader	J. Acoust. Soc. Am. <u>37</u> , 751 (1965)
2520	The Relation of the Electrical Conductivity in Single Crystals of Rhenium Trioxide to the Conductivities of $\text{Sr}_2\text{MgReO}_6$ and $\text{Na}_x\text{WO}_3$	A. Ferretti D. B. Rogers J. B. Goodenough	Accepted J. Phys. Chem. Solids
2523	Field Effect on Magnetoresistance of n-Type Indium Antimonide	S. Kawaji § H. Huff § H. C. Gatos	Accepted Surface Sci.
2528	S-Band GaAs Gunn Effect Oscillators	T. M. Quist A. G. Foyt	Proc. IEEE (Correspondence) <u>53</u> , 303 (1965)
2529A	GaAs-InSb n-n Heterojunction: A Single-Crystal "Schottky" Barrier	E. D. Hinkley R. H. Rediker D. K. Jaus §	Appl. Phys. Letters <u>6</u> , 144 (1965)
2530	Preparation and Paramagnetism of the Rare Earth Trifluorides	S. Kern P. M. Raveah	Accepted J. Phys. Chem. Solids

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2531	Greater Doubler Efficiency Using Varactor Diodes with Small Values of Gamma	A. I. Grayzel	Proc. IEEE (Correspondence) <u>53</u> , 505 (1965)
2532	Effects of Electron Irradiation on Metal-Oxide-Semiconductor Transistors	A. G. Stanley	Proc. IEEE (Correspondence) <u>53</u> , 627 (1965)
2533	A Universal Micropower Logic Element	W. G. Schmidt	Proc. IEEE (Correspondence) <u>53</u> , 629 (1965)
2535	Higher Order Corrections to the Molecular Field Theory of the Magnetic State	G. F. Dresselhaus	Accepted Phys. Rev.
2537	Propagation and Scattering in Plasmas	R. D. Kodis	Accepted Proc. IEEE
2542A	Optically Pumped InAs Laser	I. Melngailis	Accepted IEEE J. Quant. Electron.
2545	Experiment in Solar Orientation of Spin Stabilized Satellite	M. C. Crocker E. A. Vrablik	Accepted AIAA J.
2547	Scattering of Short Pulses of Electromagnetic Waves	J. Rheinsteins	Accepted Proc. IEEE
2548	Ionospheric Backscatter Observations at Millstone Hill	J. V. Evans	Accepted Planet. Space Sci.
2549	Correlation of Experimental and Theoretical Active Impedances of a Dipole in an Array	B. L. Diamond T. B. Lewis	Accepted IEEE Trans. Antennas Propag.
2553	A Comparison of Rocket, Satellite, and Radar Determinations of Electron Temperature at Midlatitudes	J. V. Evans	Accepted J. Geophys. Res.
2564	Phased Arrays - There Is a Future	J. L. Allen	Microwave J. <u>8</u> , No. 6, 108 (1965)
2566	Techniques for Speech Bandwidth Compression, Using Combinations of Channel Vcoders and Formant Vcoders	B. Gold	Accepted J. Acoust. Soc. Am.
2567	Electron Beam Pumped Lasers of PbS, PbSe, and PbTe	C. E. Hurwitz A. R. Calawa R. H. Rediker	Accepted IEEE J. Quant. Electron.
2568	More on Wet Radomes	J. Ruze	Accepted IEEE Trans. Antennas Propag.

## Journal Articles

JA No.

2573	Radio Echo Observations of Venus and Mercury at 23 cm Wavelength	J. V. Evans R. A. Brockelman J. C. Henry G. M. Hyde L. G. Kraft W. A. Reid W. W. Smith	Accepted Astron. J.
2580	Particle Sizes of Clay Minerals by Small-Angle X-Ray Scattering	R. J. Arnott	Accepted Am. Mineralogist
2596	The Lorentz Force	M. S. Cohen	Accepted Proc. IEEE (Correspondence)
2614	Experimental Observation of the Creeping Wave Phenomenon in Backscatter Using a Short Pulse Radar System	D. E. Foreman § D. F. Sedivec	Accepted Proc. IEEE
2615	Preface to the Radar Reflectivity Issue	P. C. Fritsch	Accepted Proc. IEEE

## MEETING SPEECHES

MS No.

447A R	Comparative Analyses of Thin Paraboloidal Shells of Revolution Under Gravity Load	J. W. Mar § F. Y. M. Wan	Proc. World Conf. on Shell Structures, San Francisco, Oct. 1962
770 R	Fuel-Optimal Control of a Double-Integral Plant with Response Time Constraints	M. Athans	Trans. IEEE, Appl. and Indust. <u>83</u> , 240 (1964)
779B R	Semiconductor Masers	B. Lax	Proc. Symp. on Optical Masers, Polytechnic Institute of Brooklyn, Apr. 1963
787 R	Electrical Properties of Praseodymium Oxides	J. M. Honig A. A. Cella J. C. Cornwell	Proc. Third Rare Earth Conf., Clearwater, Florida, Apr. 1963
835 R	Praseodymium - Group V Compounds. I. Vaporization Behavior and Nonstoichiometry of PrP, PrAs, PrSb and PrBi	K. A. Gingerich §	Proc. Third Rare Earth Conf., Clearwater, Florida, Apr. 1963
873 R	Functional Techniques for the Analysis of the Nonlinear Behavior of Phase-Locked Loops	H. L. VanTrees	Proc. IEEE <u>52</u> , 894 (1964)
895 R	Rapid-Freeze Method for Growth of Bismuth Single Crystals	S. Fischler	Trans. Met. Soc. AIME <u>230</u> , 340 (1964)
923 R	Long Range Communication by Orbiting Dipole Belts	W. E. Morrow, Jr.	<u>Progress in Radio Science 1960-1963</u> , Vol. 8 (Elsevier, Amsterdam, 1965), DDC 614214
925	Ferrimagnetic Spiral Configurations in Cobalt Chromite	N. Menyuk K. Dwight A. Wold	J. de Physique <u>25</u> , 528 (1964)
940 R	Narrow Band vs Localized d Electrons	J. B. Goodenough	Proc. Buhl Intl. Conf. on Materials, Pittsburgh, Oct. 1963
968 R	The Fermi Surface of Graphite	M. S. Dresselhaus J. G. Mavroides	IBM J. Research Develop. <u>8</u> , 262 (1964)
985A R	Experiments on Room Temperature Nernst-Ettingshausen Refrigerators	T. C. Harman J. M. Honig S. Fischler A. E. Paladino M. J. Button	J. Eng. Indust. (Trans. ASME B) <u>87</u> , 21 (1965)
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1049	Automatic Film Reading at Lincoln Laboratory	H. L. Kasnitz	Proc. Society of Photographic Instrumentation Engineers, St. Louis, Mar. 1964
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